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ABSTRACT

This module contains resource materials to help vocational education teachers construct effective written tests. (The materials supplement the videotape on "Written Test Construction.") Materials in the packet include guidelines for developing written tests in general and specific guidelines for the five major types of test items, brief description of Benjamin Bloom's different levels of higher learning, an explanation of difficulty level and discrimination power of test items, and a short bibliography. A short form for feedback also is enclosed. Teachers completing the module should be able to do the following: (1) list three ways a well-written test can help with instructional duties; (2) identify five major steps in developing a written test (3) define four major qualities of a well-written test; (4) list three to five basic guidelines for developing multiple choice, true/false, matching, completion, and essay test items; (5) determine item difficulty level and discrimination power for a test; and (6) construct concise, accurate, understandable test items for their classes. (KC)

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VOCATIONAL INSTRUCTOR TEACHING SKILLS PROJECT

WRITTEN TEST CONSTRUCTION

Funded by Oregon State Department of Education
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This training module was produced by the Vocational Instructor Teaching Skills Project, a consortium of Mt. Hood Community College, Portland Community College, Umpqua Community College, and the Oregon Department of Education. Similar training modules, available on your campus, offer information on Computer-Based Education, Evaluating Your Teaching Effectiveness, and Developing A Syllabus.

Vocational Instructor Teaching Skills Project

WRITTEN TEST CONSTRUCTION

Resource Packet

This packet contains resource materials to help you construct effective written tests. These materials supplement the videotape on Written Test Construction. After viewing the videotape and reading the following information, you should be able to:

* List three ways a well written test can help with your instructional duties;
* Identify five major steps in developing a written test;
* Define four major qualities of a well written test;
* List 3 - 5 basic guidelines for developing each of the following test items:
  - multiple choice;
  - true/false;
  - matching;
  - completion;
  - essay;
* Determine item difficulty level and discrimination power for a test you have constructed;
* construct concise, accurate, understandable test items for your classes.

Materials in this packet include:

- Guidelines for developing written tests in general and specific guidelines for the five major types of test items;
- Brief description of Benjamin Bloom's different levels of higher learning;
- An explanation of difficulty level and discrimination power of test items;
- A short bibliography.

We have also included two short forms for your feedback. Please take a minute to complete these forms. Completed forms can be sent to Jim Rollins at the address below or returned to your campus staff development office.

If you have any questions or comments, please contact:

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WRITTEN TESTS

Written tests are used to:

- monitor class progress
- determine if students are ready to go on to new materials
- identify specific areas of difficulty for individual students
- motivate students
- help determine grades

Major types of written tests are:

RECALL
- Multiple Choice
- True/False
- Matching

RECOGNITION
- Completion
- Essay

Testing is a topic that provokes strong opinions. Some say the true/false question has no place in college testing, while others argue for its use. Some faculty swear by the essay for measuring higher learning skills, while others simply swear at it.

Obviously, there are pros and cons for each type of test item. This training module takes a look at these benefits and drawbacks. The two most popular types of test items on college campuses are the multiple choice and the essay.

In the final analysis, a well written test item, no matter what type it is, is superior to a poorly written test item. Your subject material, students' abilities, reading levels, and your own preferences will determine which type you will use.

LEVELS OF LEARNING

When discussing the pros and cons of different test items, we often mention their ability to test for higher learning. There are several popular systems for classifying learning levels. A brief overview of one such system, developed by Benjamin Bloom, will sharpen our awareness of the need to incorporate assessment of different levels of learning in our test construction.

Bloom's Taxonomy of educational levels is composed of three major domains: Affective, Psychomotor, and Cognitive.

The AFFECTIVE DOMAIN covers values and attitudes that students develop.

The PSYCHOMOTOR DOMAIN is concerned with motor skills.

The COGNITIVE DOMAIN covers that part of learning dealing with the intellect.

The cognitive domain is of major concern in the construction of written tests. This domain is further divided into six catagories:

KNOWLEDGE - the ability to recognize or recall material in the virtually identical format in which it was presented;

COMPREHENSION - the ability to translate, interpret, or extrapolate from the content material presented;

APPLICATION - the ability to use the content to solve problems or facilitate learning in a new situation;

ANALYSIS - the ability to break down an entity into its component parts or to see the relationship between different parts of an entity;

SYNTHESIS - the ability to arrange and combine content to create a new entity;

EVALUATION - the ability to make judgements, both qualitative and quantitative, based upon some set of criteria.

EXAMPLES OF MULTIPLE CHOICE ITEMS
FOR BLOOM'S SIX COGNITIVE LEVELS

LEVEL	ITEM
Knowledge	Who was the second President of the United States? 1. Thomas Jefferson 2. George Washington 3. John Adams 4. James Monroe
Comprehension	Which of the following coefficients of correlation has the highest predictive value. 1. .85 2. .50 3. -.30 4. -.94
Application	If lumber is priced at $0.50/bd. ft. and you need 60 lineal feet of 1x4, how much will you pay? 1. $10 2. $15 3. $30 4. $60
Analysis	Warp is to Wood as Blister is to: 1. Metal 2. Paint 3. Rattan 4. Tile
Synthesis	If you were preparing a chocolate pudding using very high heat, no stirring, and unbeaten eggs, the result would be: 1. Smooth texture 2. Lumpy texture 3. curdling 4. soft consistency
Evaluation	You are planning to ascend Mt. Hood, starting from the main lodge at 2:00 A.M. and returning by 4:00 P.M. It's early Spring and the weather calls for clear skies, highs in the mid 50's, and hard packed snow. Which shoes would best serve your needs? 1. High top "tennis" shoes 2. low-cut "tennis" shoes 3. Full shank boots 4. Half shank boots

QUALITIES OF A GOOD TEST

The four essential qualities of a productive and helpful test are:

VALIDITY:
RELIABILITY:
OBJECTIVITY:
USABILITY.

A test is Valid if it measures what the instructor wants it to measure. Writing a test on common pesticide identification in Latin will not be a valid test of your students' knowledge of the pesticides. Their inability to read Latin invalidates the test. This test may tell you who can read Latin but it does not differentiate between those who know and those who do not know the material you have presented.

Validity is composed of four types:

Content validity - concerns the degree to which a test coincides with the instructional objectives and fairly samples the material to be tested;

predictive validity - relates to predicting future success or failure based upon present testing performance;

Concurrent validity - correlates test results with other presently occurring performances and activities;

Construct validity - looks at what concepts can account for the differences in test performance between students.

Testing for validity can become an awesome statistical undertaking. For teacher-made written tests validity can and should remain a simple concept. Does your test measure what you want it to measure? Is it truthful? Does the test content coincide with your instructional objectives? Answers to these questions tell if your tests are valid. If 80% of the class work was spent on disc brakes and 80% of your test is composed of questions on fuel gauges, you do not have a valid test.

If reading ability, poor directions, or inadequate lighting adversely affect student test results, then you haven't measured what you wanted to measure.

You, with your expertise in the subject material and basic skills in test construction, can determine the validity of your tests.

The test must be valid: if not, you waste your time and your students' time.

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QUALITIES OF A GOOD TEST - p2

A test is RELIABLE if it is consistent. If a reliable test is given several times, students will receive close to the same score each time, assuming that no new learning has occurred. Lengthening a test increases its reliability if the added test items are of equal or better quality than those in the original test. Too long a test can reduce reliability by introducing student fatigue and boredom.

An OBJECTIVE test is free from bias. Clear, precise scoring standards can be established before the test is administered. Different people, using these criteria, can grade the tests and arrive at nearly identical scores. An objective test eliminates the judgement or personal opinion of the scorer as a factor in determining the student's score.

A test is USABLE if it's practical. A test with a high degree of usability is easy to administer, easy to score, and economically feasible to use.

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GUIDE FOR TEST CONSTRUCTION

The following guidelines will help you write effective test items.

* START EARLY. Don't write your entire test in one marathon sitting.
* Develop CLEAR INSTRUCTIONS.
* Put ALL TEST TYPES TOGETHER.
* Continuously REVISE YOUR TEST. Improve test items and be certain your tests parallel what you cover in the class.
* SEQUENCE test items from easy to difficult.
* MATCH THE VOCABULARY and degree of difficulty to the level of the class.
* DO NOT SUPPLY THE ANSWER to another item with the wording of your present test item.
* KEEP RELATED TEST ITEMS TOGETHER.

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MULTIPLE CHOICE

The multiple choice item consists of a stem (a question or an incomplete statement) and two or more responses.

The basic rules for constructing multiple choice items are:

1. Be certain each item has one and only one correct or best answer.
2. Keep the responses short. Include as much information as possible in the stem.
3. Make all distractors plausible. Avoid obviously incorrect alternatives that only act as fillers.
4. All responses should be grammatically consistent with the stem.
5. Keep all responses approximately the same length. The tendency is to have a correct answer that is longer than the other choices.
6. Avoid answer patterns. The tendency here is to place the correct answer either first or last. Randomly distribute the correct answers.
7. When using an opinion statement be sure to note that it is an opinion and cite the source of the opinion.

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TRUE-FALSE ITEMS

The true-false item generally consists of a statement to be judged either true or false.

The basic rules for constructing true-false items are:

1. Be concise. Avoid long, involved statements.

2. Each statement should be entirely true or entirely false. Rather than have a statement with two clauses, one true and one false, construct two separate statements. Remember, you are not trying to create a word puzzle.

3. Don't make items false on a technicality.

4. Avoid qualitative terms. Words like SOME, FEW, and SEVERAL have different meanings to different people.

5. Avoid specific determiners. Statements beginning with ALL or ALWAYS are usually false and statements with SOMETIMES and MAYBE are generally true.

6. Avoid asking students to answer by writing the letter T or F. Otherwise, your eyesight and sanity will suffer.

7. Write true/false items only when they are more appropriate than other types.

MATCHING ITEMS

The matching set item includes a list of premises and a list of responses that are to be matched to each of the premises.

The basic rules for constructing matching items are:

1. Maintain a high degree of similarity in every set of matching items. When different types of responses are included in the same set, the student can disregard inappropriate responses and improve his odds for guessing.

2. Use a short list of responses - between 5 and 15 - to minimize confusion.

3. Wording for responses should be short. Students will scan the response list many times as they answer matching items.

4. The entire matching set should be on one page.

5. Place the premise list on the left and the response list on the right.

6. List responses in a logical order, either alphabetically or chronologically, so that students who know the answers can locate them quickly.

7. Supply more responses than premises or allow responses to be used more than once.

COMPLETION ITEMS

The completion item usually takes the form of a question or incomplete sentence and is generally used to measure specific facts.

The basic rules for constructing completion items are:

1. Use your own wording for test items. Text quotations lead to rote memorization.

2. Omit only key words for fill in the blank statements. Test for significant knowledge, not trivia.

3. Limit the number of blanks. Leave enough clues so that knowledgeable students can supply the correct answer.

4. Keep the blanks the same length to avoid inappropriate clues.

5. Place blanks toward the end of the sentence. Students can more easily understand the question in this form. You want students to miss questions because of their lack of knowledge, not because they misunderstood the question.

ESSAY ITEMS

The basic rules for constructing essay items are:

1. Write your ideal answer first, then write a clear, concise question with enough keywords to define the scope and direction you expect students to provide.

2. Require students to answer all questions. Allowing students to choose from several questions means that students do not all take the same test. In such a case, comparison of scores is all but impossible.

3. Use essay items to test for students' grasp of higher learning objectives such as applications, syntheses, and evaluations. Knowledge of specific facts can be better measured using other types of test items.

4. Consider the time factor. Students can only answer two or three essay questions in an hour. Be sure to select questions that measure important objectives.

5. Give students advance notice of essay tests. Students study differently for essay tests than they do for the more objective tests. With essays, they are more concerned with overall impressions, trends, and general concepts than with specific facts.

When correcting essay items:

1. Keep the tests anonymous. There is a tendency when correcting tests to give the benefit of the doubt to only your better students. Anonymity helps control this bias.

2. Correct a single test item for all papers before going to the next item. This helps maintain a consistent scoring standard for each item. It also minimizes the influence of a previous response on your perception of subsequent responses. If a student does well on the first question, you are apt to rate subsequent responses higher than they merit. Likewise, a poor first answer tends to penalize subsequent responses.

3. Shuffle papers after each item is scored. This helps keep a consistent standard by distributing any effects from your exhaustion or boredom. Otherwise, the first papers suffer from your stiff initial standards, and the last few papers benefit from your rush to reach the end.

4. When finished, go back and reevaluate the first five or six papers to be sure your scoring criteria has not changed.

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REDUCING TEST ANXIETY

The best of tests can fail miserably for a number of reasons. One major problem area is student test anxiety.

Several steps can be taken to reduce test anxiety.

Test frequently. Students will become more accustomed to testing and there will be less riding on each individual test. Stress is high for many students in a class where a final grade is based soley on the results from two or three tests.

Inform students of tests before hand. Tell them how long the test will be, what types of test items will be included, and what they should bring to the test. Let them know what will be expected of them.

Give clear test instructions. Explain and give examples for each type of test item. Tell students the basis to be used in scoring their tests.

Be organized. Have extra copies of your test printed. Be sure copies are legible. Provide adequate needed materials for taking the test.

Provide a calm testing environment. Minimize problems with lighting, room temperature, seating arrangements, and other potential distractions. If the test is less than a full class period, give the test at the beginning of the class.

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TESTING THE TEST

After you have used a test take some time to evaluate it. Did the test do what you expected? Analyze student feedback about the test items. Are some items consistently misread? Take into account alternative correct answers students have supplied and rewrite these "problem" items.

Two important attributes of a test item are difficulty level and discrimination power.

Difficulty level measures how hard a test item was for the group tested. Difficulty level is the percent of students who correctly answer the item. If all students answer the item correctly it has a 100% difficulty level. If no one answers correctly, the test item has a difficulty level of 0%.

Discrimination power measures an item's ability to differentiate between the strong and weak students. Discrimination power measures how well an individual test item agrees with the overall test. If we are reasonably certain our test is valid, then the overall test score should agree with test scores on individual items. We measure discrimination power by comparing the strongest and weakest students. If strong students answer the test item correctly and weak students don't, then the test item is discriminating between the strong and weak students.

Let's compare the top and bottom 25% test scores from a class of 100 students. The chart on the following page displays the number of students in both the top and bottom quarters who have answered each test item correctly.

Item # 3 has good discrimination power. The "good" students answered correctly and the "poor" students answered incorrectly.

Item # 7 is a poor test item. The top students missed this item and the weaker students answered it correctly. This item needs to be discarded or rewritten. The item <u>is</u> discriminating between groups of students, but in a negative manner.

Item # 9 does not discriminate between strong and weak students but it is not necessarily a bad item. Most students miss this item. The item difficulty level is high.

The discrimination power of a test item is low with very difficult or very easy test items. Most students answer easy items correctly and difficult items incorrectly. In both cases there is no difference in test performance between the strong and weak students.

A 50 - 75% difficulty level will yield maximum discrimination between those who know the material and those who don't. But we need to also include easy items to encourage weaker students and difficult items to challenge the better students.

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test item	number correct responses top 25%	bottom 25%
1.	25	25
2.	23	20
3.	21	6
4.	20	10
5.	22	9
6.	18	12
7.	4	15
8.	13	5
9.	3	2
10.	2	0

SAMPLE TEST ITEMS

POOR EXAMPLES

T F 1. If the software doesn't boot up, it may be because the program language and hardware are incompatable.
(The word may is ambiguous.)

2. Who was Thomas Jefferson? _____
(This item is too general.)

3. Plate current
a. never increases.
b. gradually increases.
c. increases to a point, when the filament voltage is raised, provided the plate voltage is held constant.
d. is a measure of plate resistance.
(Response length is a clue. The correct answer is the longest.)

T F 4. Stars closest to the earth are always the brightest.
(The word always is a clue the statement is false.)

T F 5. Is it not untrue that the purchase of Alaska was not unpopular?
(Use of negatives is confusing.)

6. What was Harry S. Truman's middle name?
(Stresses trivia.)

7.

Column A	Column B
_____ flacid	a. area of a rectangle
_____ Charles Dickens	b. measuring device
_____ volt meter	c. ascorbic acid
_____ length x width	d. Tale of Two Cities
	e. limp

(Matching items are not similar.)

8. Irving Stone wrote _____.
(Indefinite. More than one correct answer.)

T F 9. According to some peripatetic, sesquipedalian politicos the raison d'etre for capital punishment is retribution.
(Vocabulary probably unfamiliar to students.)

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10. Beer can be pasteurized by :
    a. heating it to a temperature of 100^0
    b. heating it to a temperature of 210^0
    c. heating it to a temperature of 325^0
    d. heating it to a temperature of 515^0
    (Most of the response wording should be included in stem.)

11. Who wrote Penrod?
    a. Mark Twain
    b. Lewis Carroll
    c. Samuel Clemens
    d. Robert Louis Stevenson
    (More than one correct answer.)

12. The ____ test is a ____ ____ of the first ____.
    (Too many blanks.)

13. What led to the formation of the State's Rights Party?
    a. The industrialization of the South.
    b. Failure of the sugar cane crop.
    c. The demand of the states for the right to make their own laws.
    d. The issue of free silver.
    (Similar terms in the stem and the correct response offer a clue.)

14. Test scores and criterion scores are graphically depicted on an
    a. probability bar chart.
    b. expectancy table.
    c. frequency distribution.
    d. correlation coefficient.
    (An is a grammatical clue.)

T F 15. Charles Dickens, born in 1831 in the small mining community of Welshire, was an outstanding English author of the late 19th century and is best known for his romantic adventure The Pickwick Papers, which was first published in serial form for the "London Times".
(Too many clauses.)

Overall, this test is a hodge-podge of different test types, fails to sequence the test items according to difficulty, and offers the reader no directions.

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QUIZ ON DEVELOPING WRITTEN TESTS

DIRECTIONS: Each of the following questions or incomplete statements below is followed by several possible responses. Choose the response that best answers the question or completes the statement. Circle the identifying letter of that response (A,B,C,or D). The example below is correctly answered.

EXAMPLE:

The multiple choice test item is a type of:

(A) objective test
B. subjective test
C. essay test
D. standard test

1. Which type of test item requires remembering rather than recognition?

A. true-false
B. matching
C. multiple choice
D. completion

2. Recognition test items are:

A. easy to score
B. intended to have students organize facts
C. influenced by the student's ability to write quickly.
D. easy to construct

3. What kind or kinds of ability can be measured by an essay item?

A. ability to recognize
B. ability to remember or recall
C. ability to organize
D. B and C

4. In multiple choice items, it is best to use:

A. several negative stems and responses
B. both positive and negative stems and responses
C. positive rather than negative stems and responses
D. positive stems and negative responses

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5. The maximum suggested responses for a matching exercise is:

a. 10
b. 12
c. 5
d. 7

6. When test items include controversial issues, what principle should be followed?

a. both sides should be given
b. authority should be quoted
c. only facts should be included
d. more than one answer should be accepted.

7. If a test measures what it is supposed to measure, it is:

a. valid
b. reliable
c. objective
d. usable

8. If a test measures accurately consistently, it is:

a. valid
b. reliable
c. objective
d. usable

9. The best way to reduce the students' chances for guessing the correct response for matching items is to:

a. have more responses than premises
b. have the same number of responses as premises
c. arrange the responses in logical order
d. arrange the premises in logical order

10. The percent of students answering a test item correctly is known as that test item's

a. difficulty level
b. discrimination power
c. reliability level
d. validity factor.

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QUIZ - p. 3

DIRECTIONS: Match the types of test items in Column B with their characteristics in Column A. Items in Column B may be used more than once.

Column A	Column B
____ 11. The list of responses is longer than the list of premises	A. Multiple choice
____ 12. Each item contains one distinct, clearly stated idea.	B. True/false
____ 13. Amplifies recall and organization of materials	C. Matching
	D. Completion
	E. Essay

DIRECTIONS: Listed below are a number of statements. Some are true and some are false. If the statement is true, circle the "T". If the statement is false, circle the "F". The example below is answered correctly.

EXAMPLE T (F) Recall tests are easy to construct.

T F 14. A recall test measures the ability to express an idea in writing.

T F 15. Compared to essay tests, recognition tests can sample only small amounts of information during the same amount of time.

T F 16. Recognition tests are difficult to score.

T F 17. Recognition tests are highly influenced by ability to write rapidly.

T F 18. Recognition tests take little time to prepare properly.

T F 19. Essay tests require students to organize facts and figures.

T F 20. All other factors being the same, the shorter a test, the more reliable it is.

T F 21. A good true false test has approximately equal number of true and false items.

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Quiz - p. 4

T F 22. The easier test items should be placed near the end of the test section.

T F 23. True-false should not be taken verbatim from the text.

T F 24. All of the responses for each matching set should be included on a single page.

T F 25. More responses than premises should be used in a set.

T F 26. The completion item measures a students recognition of material.

T F 27. The multiple choice test item is the type of recognition item on which students have the best chance to guess the correct response.

T F 28. Use quantitative and precise language rather than qualitative language whenever possible in written tests.

T F 29. Tell students in advance if grammar and spelling will be taken into account in scoring the test.

T F 30. In multiple choice items, supply the correct response, two that are almost correct, and one that is obviously incorrect.

T F 31. One weakness of the completion item is the difficulty in constructing items that require only one correct answer.

T F 32. The difficulty level of a test item correlates the scoring results of the test as a whole with the scoring results of the individual test item.

Directions: In the spaces provided, write the word or phrase that best completes the statement or answers the question.

33 - 35. List three of the five benefits of a written test that were discussed in this module.

_____

_____

_____

36 - 40. Identify five of the seven guidelines for overall written test construction which were discussed in this module.

_____

_____

_____

_____

_____

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QUIZ KEY

1. d	9. a	17. F	25. T
2. a	10. a	18. F	26. F
3. d	11. c	19. T	27. F
4. c	12. b	20. F	28. T
5. a	13. c	21. T	29. T
6. b	14. F	22. F	30. F
7. a	15. F	23. T	31. T
8. d	16. F	24. T	32. F

33 - 35. Any three of the following:
- Monitor class progress
- Diagnosis individual problems
- Motivation
- Learning experience
- Help in assessing grades

36 - 40. Any five of the following:
- Start early
- Develop clear directions
- Put all test types together
- Revise your test
- Sequence items from easy to difficult
- Match vocabulary and test difficulty to student level
- Do not supply answers to other items
- Keep related test items together

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BIBLIOGRAPHY

Educational Measurement. 2nd Edition. Robert L. Thorndike, 1971. American Council on Education. Washington, D.C.

Recognized as a leading reference work in the theory and techniques of educational measurement. Goes into more depth than you may wish, but does have excellent chapters on essay examinations and writing test items.

Teacher-Made Tests. 2nd Edition. John A. Green. 1975. Harper & Row. New York.

Practical suggestions for planning, constructing, and using teacher-made tests. Good discussion of guidelines for developing test items.

The Testing and Grading of Students. Ohmer Milton and John W. Edgerly. 1977. Change Magazine.

A short, readable monograph on written test construction and student performance grading. Use many good examples to stress their points.

Objectives-Based Testing: A Guide to Effective Test Development. Harold F. Rahmlov and Katheryn K. Woodley. 1979. Educational Technology Publications. New Jersey.

Stresses a strong relationship between instructional objectives and test items.

VOCATIONAL INSTRUCTOR TEACHING SKILLS PROJECT

VIDEOTAPE EVALUATION

1. TAPE TOPIC_____.

2. Did you experience any technical difficulties with the tape? Yes___ No__
   If yes, please elaborate_____
   _____.

3. Was the videotape content helpful? Yes___ No___
   _____
   _____.

4. Do you have any suggestions for improving the presentation? _____
   _____
   _____.

5. Do you work with non-traditional role students (males in traditional female occupational areas or females in traditional male occupational areas)?
   Yes __ No___
   If yes, will the videotape materials help you in meeting this group's needs?
   Yes___ No__ _____
   _____.

6. Do you work with handicapped and disadvantaged students? Yes___ No__
   If yes, will the videotape materials help you in meeting this group's needs?
   Yes__ No _____
   _____.

7. Comments:_____
   _____
   _____.

VOCATIONAL INSTRUCTOR TEACHING SKILLS PROJECT

RESOURCE MATERIALS EVALUATION

1. CONTENT TOPIC_____.

2. Did you find the resource materials helpful? Yes__ No__
_____
_____.

3. What material was most helpful? _____.

4. What material was least helpful? _____.

5. Do you know of any materials you believe we should add to the packet?___
_____.

6. Do you work with non-traditional role students (males in traditional female occupational roles or females in traditional male occupational roles)?
Yes__ No__
If yes, will these materials help you in meeting this group's needs?
Yes___ No__ _____
_____.

7. Do you work with the handicapped and disadvantaged? Yes___ No__
If yes, will these materials help you in meeting this group's needs?
Yes___ No__ _____
_____

8. Comments:_____
_____
_____.